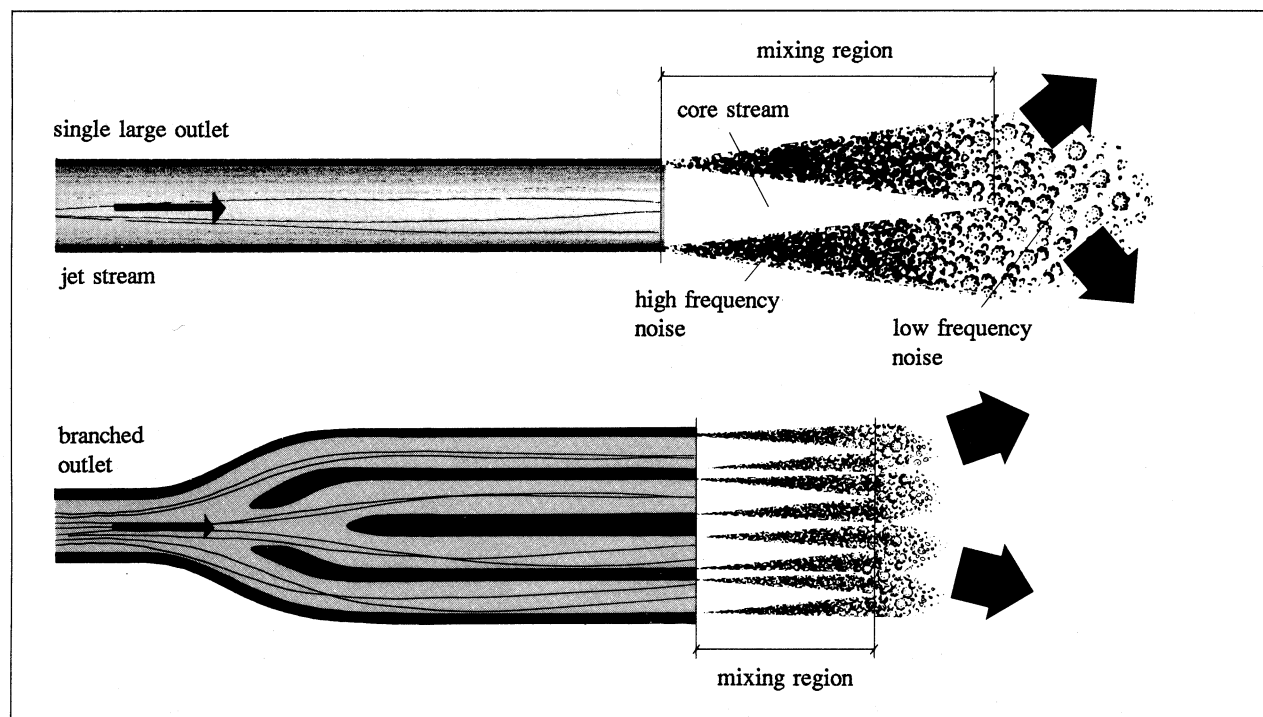


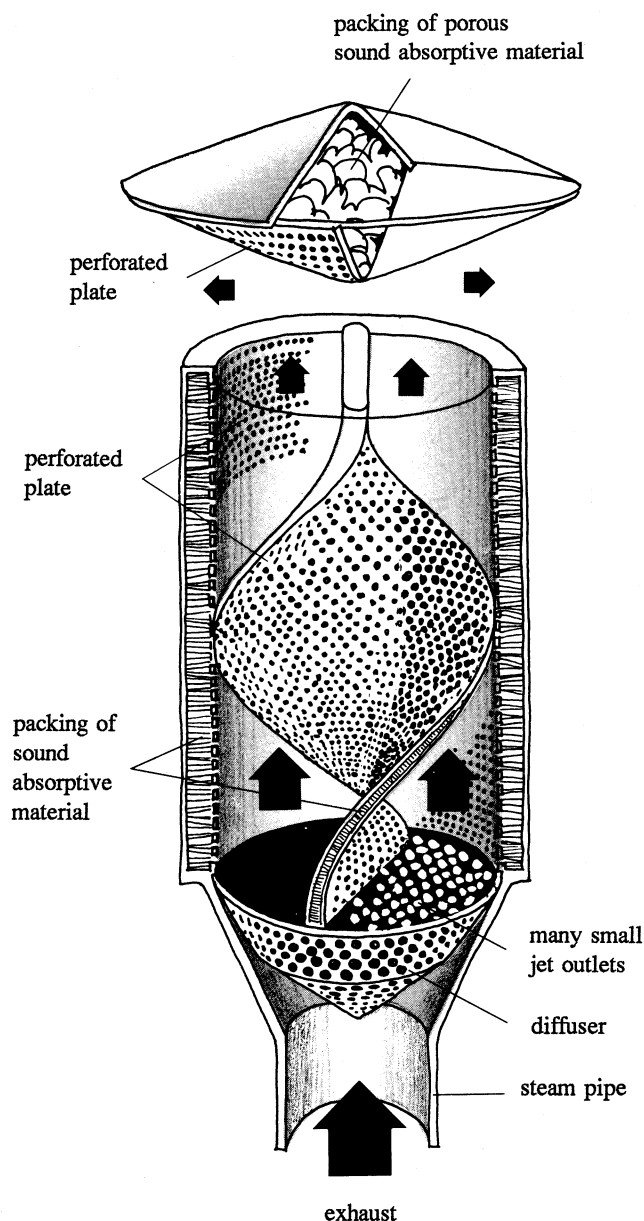
LOW FREQUENCY JET NOISE IS EASIER TO REDUCE IF CONVERTED TO HIGH FREQUENCY

If the diameter of a gas outlet is large, the noise will peak at low frequency. If the diameter is small, the noise will peak at high frequency. The low frequency noise can be reduced by replacing a large outlet with several small ones. The high frequency noise is increased, but this is more easily attenuated.

Principle



Application with compressed air and steam



Example

Steam safety valves in industry sometimes have to discharge very large amounts of steam many times each day. The required large pipes and large outlet speeds produce high level noise with dominating low frequencies. These are disturbing at great distances.

Control Measure

A diffuser in the shape of a perforated cone and a high-frequency muffler with low flow resistance are connected to the steam pipe. The outlet speed is reduced by a factor of four. The total noise emitted is reduced by about 20 dB. The helical muffler absorbs the high-frequency sound generated by the many small holes of the perforated cone.